

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A composition, comprising:
a matrix functionality capable of providing an adhesive bond to an electrically conductive surface and an electrolyte functionality providing sufficient ionic conductivity to said composition so that, when said matrix functionality forms said adhesive bond to said electrically conductive surface, said composition can support a faradic reaction at said electrically conductive surface, said faradic reaction weakening said adhesive bond,
wherein, when said matrix functionality forms said adhesive bond to said electrically conductive surface, said adhesive bond has a shear strength greater than 200 psi, and
wherein said matrix functionality comprises an epoxy, and said electrolyte functionality comprises an electrolyte additive selected from the group consisting of ion solvating molecules, oligomers and polymers, and ionomers.
- 2-3. (Cancelled).
4. (Currently Amended) The composition of claim 2 1, wherein said ~~polymer~~ epoxy has a variable crosslink density to form regions of low crosslink density having a relatively high ionic conductivity and regions of high crosslink density having a relatively high mechanical strength.
5. (Currently Amended) The composition of claim 2 1, wherein said ~~polymer~~ epoxy includes coordination sites that are capable of solvating ions and that support the electrolyte functionality of said composition.

6. (Original) The composition of claim 5, wherein said coordination sites are selected from the group consisting of alkoxy moieties, disulfide moieties, thioalkyl moieties, nitrile moieties, and polyvinylidene fluoride moieties and derivatives thereof.

7. (Cancelled).

8. (Currently Amended) The composition of claim 1 ~~or 7~~, wherein said electrolyte functionality is localized in regions within said polymer to form a secondary phase with ionic conductivity.

9. (Original) The composition of claim 1, wherein said electrochemically disbondable composition is a phase separated material having first regions of substantially matrix functionality and second regions of substantially electrolyte functionality.

10-13. (Cancelled).

14. (Currently Amended) The composition of claim ~~13~~ 9, wherein said electrolyte functionality comprises an ion solvating molecule that is selected from the group consisting of low molecular weight alkoxides, alcohols, alkyl carbonates, cyclic esters, nitriles, amides and ureas.

15. (Original) The composition of claim 9, wherein said phase separated material comprises a block or graft copolymer containing non-polar components and components of ionic conductivity.

16. (Original) The composition of claim 15, wherein said non-polar component of said block copolymer is selected to have a low affinity for said matrix functionality of said composition to facilitate phase separation.

17. (Original) The composition of claim 1, further comprising a reservoir for containing curing or crosslinking agent.

18. (Original) The composition of claim 17, wherein the reservoir is selected from the group consisting of zeolites, clays and polymer gels.

19. (Original) The composition of claim 1 or 9, wherein said electrolyte functionality includes a salt capable of being solvated into said composition.

20. (Original) The composition of claim 19, wherein said salt is selected from the group consisting of alkali metal, alkaline earth and ammonium salts.

21. (Original) The composition of claim 19, wherein said salts include an anion selected from the group consisting of hexafluorophosphate, tetrafluoroborate, hexafluoroantimonate and perchlorate.

22. (Original) The composition of claim 19, wherein said salt is an ammonium salt and the ammonium cation is immobilized in said composition.

23. (Previously Presented) The composition of claim 1 or 9, wherein said composition has an ionic conductivity in the range of 10^{-11} S/cm to 10^{-5} S/cm.

24. (Previously Presented) The composition of claim 1 or 9, wherein said composition has an ionic conductivity in the range of 10^{-9} S/cm to 10^{-7} S/cm.

25. (Original) The composition of claim 1 or 9, further comprising an additive selected from the group consisting of pigments, corrosion inhibitors, leveling agents, gloss promoters, rubber tougheners and fillers.

26. (Original) The composition of claim 1 or 9, wherein said composition is an adhesive.

27. (Cancelled).

28. (Original) The composition of claim 1 or 9, wherein said composition is a coating.

29. (Original) The composition of claim 28, wherein said coating is resistant to delamination from a substrate to which it is applied.

30. (Previously Presented) A composition, comprising:
a curable polymeric material comprising an epoxy; and
an electrolyte located in said curable polymeric material, said electrolyte being selected from the group consisting of ion solvating molecules, oligomers and polymers, and ionomers,
wherein said curable polymeric material, when cured, can form adhesive bonds with an electrically conductive surface, said adhesive bonds having a shear strength of greater than 200 psi, and said composition has sufficient ionic conductivity to support a faradic reaction at said electrically conductive surface, said faradic reaction weakening said adhesive bonds.

31. (Cancelled).

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Serial No. : 09/352,976
Filed : July 14, 1999
Page : 6 of 8

Attorney's Docket No.: 00169-027001

32. (Original) The composition of claim 30, wherein the composition phase separates upon curing, said phase separated material having first regions of mechanical strength and second regions of ionic conductivity.

33-65. (Cancelled).